

Vendor Performance 2000

What is Real?
CDR, CPR &
AIR

NIH, Aug. 9, 2000

Presented by:
Kent Gale

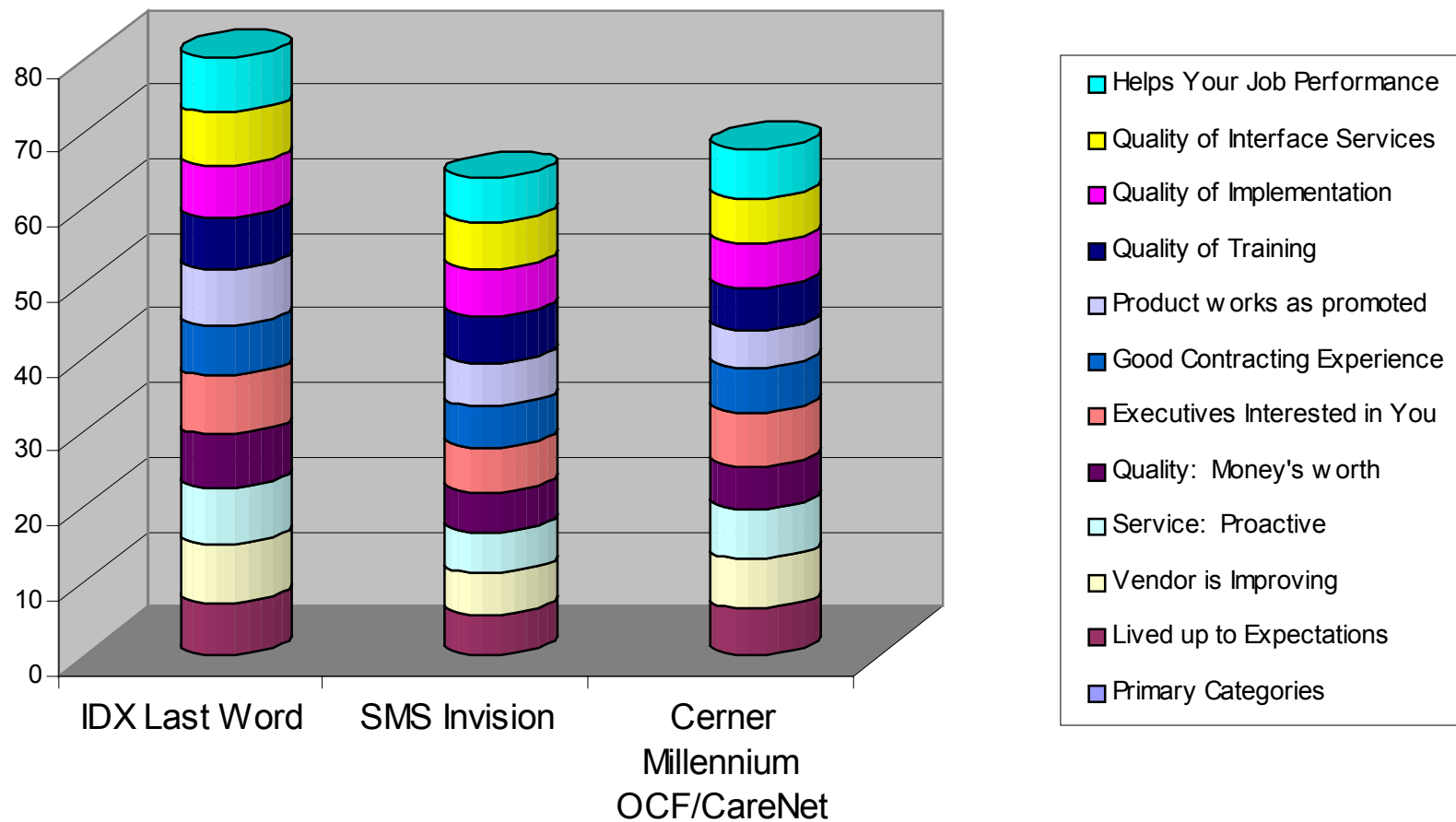


KLAS, your source for Vendor Performance Reporting!



**Get involved, give us your
opinion!**

SMS, IDX, Cerner Performance



SMS, IDX, Cerner

Key Indicators of Performance

| | <i>IDX LastWord</i> | <i>SMS Invision</i> | <i>Cerner Millennium OCF/CareNet</i> |
|-------------------------------------|--------------------------------|--------------------------------|---|
| Would you buy it again | 100% | 55% | 83% |
| Avoids Nickel and Diming | 56% | 36% | 27% |
| Keeps all Promises | 56% | 45% | 18% |
| A fair Contract | 90% | 70% | 100% |
| Contract is Complete (No omissions) | 75% | 59% | 91% |
| Contract Administered Fairly | 100% | 82% | 100% |
| Timely Enhancement Releases | 60% | 79% | 92% |
| Support Costs as Expected | 89% | 81% | 70% |
| Ranked Client's Best Vendor | 45% | 27% | 50% |

Sample CIO Evaluation

1-5-2000

| | Question | SMS Allegra | Sunquest FlexiLab | Cerner XYZ | ADAC Quadris | HBOC XYZ |
|----|---|----------------|----------------------|---------------|-----------------|-------------|
| 2 | Have you implemented a major software product in last 3 years with the vendor? (Yes/No) | Yes | Yes | Yes | Yes | yes |
| 3 | Is this vendor a core part of your IS plan? (Yes/No) | Yes | Yes | Yes | Yes | yes |
| 4 | Has Vendor relationship improved your organization's effectiveness/productivity? | 5 | 8 | 5 | 8 | 7 |
| 5 | Has Vendor lived up to expectations? | 4 | 7 | 4 | 8 | 7 |
| 6 | Is this vendor improving or declining (past 6-12 months)? | 6 | 7 | 3 | 6 | 6 |
| 7 | Vendor Service: Is the Vendor Genuinely proactive? | 6 | 5 | 5 | 9 | 6 |
| 8 | Committed to Real Problem Resolution? | 6 | 4 | 5 | 8 | 7 |
| 9 | Vendor Quality: Have you received your money's worth? | 6 | 8 | 4 | 8 | 8 |
| 10 | Corporate commitment to new enterprise requirements, demonstrating industry knowledge/vision and use of technology? | 6 | 3 | 3 | 8 | 7 |



Sample CIO Commentary

EPIC (EpicCare, Cadence, Resolute)


Does well:

We just completed a major implementation of Cadence and EpicCare. We went full cycle and it went very well. We are very happy with EPIC.

Our clinicians use it every day. They make thorough use of EpicCare. It is very much a challenge to change their lifestyle and it can be very painful. But no one wants to pull it out after it is live and running. It is a matter of a solid plan to get it operational quickly and with the least discomfort. Once the docs adapt, they become advocates.

Needs improvement:

Yes, we have had some response time issues. We have lots of users. We are one of EPIC's largest sites. We realize the hardware was sized a little small and an upgrade usually solves the problem. If not, EPIC has been quick to tune the system for us.





Who Responded to The Surveys?

45% From IDN's

**49% From Stand Alone Organizations
(Basically Acute Care and a few others)**

78% over 200 beds

16% under 200 beds

6% Other (Clinics, etc.)

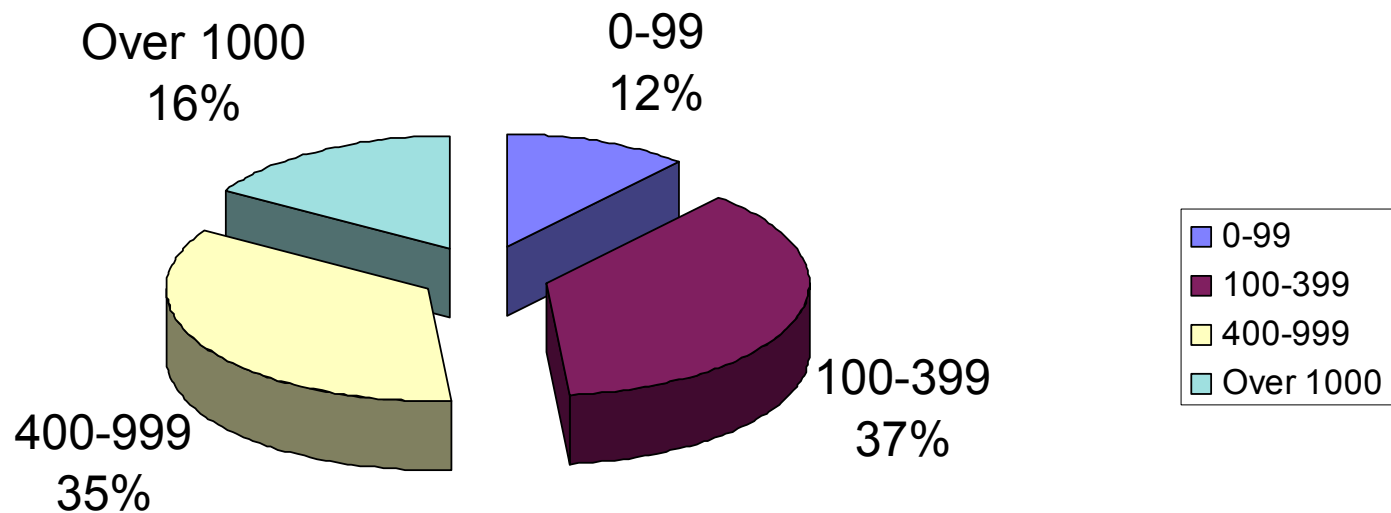
The People that Responded-

65% were CIOs

35% were Directors/Managers



Who Responded to The Surveys?



16% over 1000 beds

35% 400-999 beds


37% 100-399 beds

12% 0-99 (Small Hospitals, Clinics, etc.)



How Many Facilities Represented?

| <u>Vendor</u> | <u># Fac. Rpts</u> |
|---------------|--------------------|
| MHBOC | 1395 |
| SMS | 660 |
| Cerner | 477 |
| Sunquest | 396 |
| Eclipsys | 330 |
| Meditech | 238 |
| IDX | 211 |
| Per Se | 144 |
| 3M | 121 |



Vendor Relationship Evaluation

CIO NAME

(Rating is from 1-9, 1=Poor/Low 9=Excellent/High)

| | Question | HBOC Star 2000 | HBOC HNS | HBOC Homecare | HBOC Practice Management | HBOC Care Manager | HBOC Healthcare Scheduling |
|----|---|----------------------|-------------|-----------------------|--------------------------------|--------------------------|----------------------------------|
| 2 | Have you implemented a major software product in last 3 years with the vendor? (Yes/No) | Yes | Yes | Yes | Yes | No <u>Yes</u> | <u>No</u> |
| 3 | Is this vendor a core part of your IS plan? (Yes/No) | Yes | Yes | Yes | Yes | Yes | |
| 4 | Has Vendor relationship improved your organization's effectiveness/productivity? | 7 | 1 | 5 | 5 | <u>7</u> | |
| 5 | Has Vendor lived up to expectations? | 7 | 1 | 3 <u>2</u> | 3 <u>4</u> | <u>1</u> | |
| 6 | Is this vendor improving or declining (past 6-12 months)? | 5 | 2 | 3 | 3 | 3 <u>5</u> | |
| 7 | Vendor Service: Is the Vendor Genuinely proactive? | 3 | 1 | 1 | 1 | 4 <u>3</u> | |
| 8 | Committed to Real Problem Resolution? | 3 | 1 | 1 | 1 | 4 <u>3</u> | |
| 9 | Vendor Quality: Have you received your money's worth? | 5 | 1 | 5 | 5 | <u>5</u> | |
| 10 | Corporate commitment to new enterprise requirements, demonstrating industry knowledge/vision and use of technology? | 8 | 8 | 8 <u>6</u> | 7 | 7 | |

| | Question | HBOC Star 2000 | HBOC HNS | HBOC Homecare | HBOC Practice Management | HBOC Care Manager | HBOC Healthcare Scheduling |
|----|--|----------------------|-------------|------------------|--------------------------------|-------------------------|----------------------------------|
| 11 | Would you buy from this vendor again (based on current performance)? (Yes/No) | Yes | No | No | Yes | <u>Yes</u> | |
| 12 | Vendor Attitude (Partnering): Vendor management involved and interested in your organization's unique requirements and needs..excited to have you as a client? | 6 | 1 | 1 | 3 | <u>25</u> | |
| 13 | Do they nickel and dime for ongoing products/services? | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> | <u>yes</u> | |
| 14 | Has vendor kept ALL promises? (Yes/No) | No | No | No | No | No | |
| 15 | Vendor Performance: Marketing/Selling Effort- General Satisfaction? | 5 | 5 | 5 | 5 | 5 | |
| 16 | Contracting: General satisfaction with process, terms and conditions? | 8 | 8 | 8 | 8 | 8 | |
| 17 | Has the contract turned out to be fair? (Yes/No) | Yes | Yes | Yes | Yes | Yes | |
| 18 | Was the contract complete? (No surprises or Omissions-- Yes/No) | Yes | Yes | Yes | Yes | Yes | |
| 19 | Vendor administers contract fairly, doesn't over enforce? (Yes/No) | Yes | Yes | Yes | Yes | Yes | |
| 20 | Vendor performance: Deliverables- Product functions as sold in proposal, sales presentation, demonstration and contract? | 8 | 1 | 3 | 5 | <u>7</u> | |
| 21 | Overall rating for this vendor's product quality | 7 | 1 | 3 | 5 | <u>7</u> | |
| 22 | Training: Overall effectiveness and quality? | 5 | 1 | 3 | 5 | 5 | |
| 23 | Implementation Services: Overall quality and effectiveness? | 4 | 1 | 1 | 3 | 3 | |
| 24 | Met contracted time frame? | 9 | 1 | 1 | 5 | <u>9</u> | |
| 25 | Within expected budget and/or vendor's quoted price? | 9 | <u>1</u> | 9 | 9 | <u>9</u> | |

Spring 2000 Top 10 Performers

| <i>Overall Rank</i> | <i>Previous Ranking*</i> | <i>Vendor/Product</i> | <i>Major Product</i> | <i>Average Rating (1-9)</i> |
|----------------------------|---------------------------------|------------------------------|-----------------------------|------------------------------------|
| 1. | 1 | EPIC | Ambulatory EMR | 7.88 |
| 2. | 3 | MedicaLogic | Ambulatory EMR | 7.80 |
| 3. | NR | IDXRad | Radiology | 7.51 |
| 4. | 4 | USA (Unibased Systems) | Ent. Scheduling | 7.47 |
| 5. | 2 | MSM | OR Scheduling | 7.27 |
| 6. | 5 | LSS Data Systems | Practice Mgmt. | 7.23 |
| 7. | 6 | Tempus Encompass | Ent. Scheduling | 7.17 |
| 8. | NR | Sunquest FlexiRad | Radiology | 7.06 |
| 9. | 8 | 3M Care Innovation S. | CDR/EMPI | 6.94 |
| 10. | 7 | QuadraMed Affinity | HIS | 6.94 |

PLATINUM KLAS

































**REAL TIME ACCESS TO
HEALTHCARE I.T. VENDOR
PERFORMANCE!**

PLATINUM KLAS

Radiology Comparison

Primary Categories

| | ADAC | Cerner | IDX | SMS | Sunquest |
|--|--|--|--|--|--|
| 3rd Party Prod. Works w/ Vendor Prod. |  5 |  4 |  1 |  3 |  2 |
| Enterprise Commitment to Technology |  5 |  3 |  1 |  4 |  2 |
| Executives Interested in You |  5 |  5 |  1 |  5 |  2 |
| Good Contracting Experience |  5 |  4 |  1 |  3 |  2 |
| Helps Your Job Performance |  5 |  4 |  1 |  5 |  2 |
| Lived up to Expectations |  5 |  4 |  1 |  3 |  2 |

Platinum KLAS— Complete Vendor Ratings

| | | | | |
|--|--|---|--|--|
|  <u>3M</u> |  <u>ADAC</u> |  <u>Cerner</u> |  <u>CPSI</u> |  <u>Citation</u> |
|  <u>DHT</u> |  <u>Eclipsys</u> |  <u>Epic</u> |  <u>Geac</u> |  <u>Global</u> |
|  <u>HCS</u> |  <u>HMS</u> |  <u>Healthcare Management Systems</u> |  <u>IDX</u> |  <u>Infinium</u> |

KLAS


**Talking monthly to 100's of Healthcare
Executives and Managers on Software
Vendor Performance!**



**Finding answers that go
well beyond the questions!**



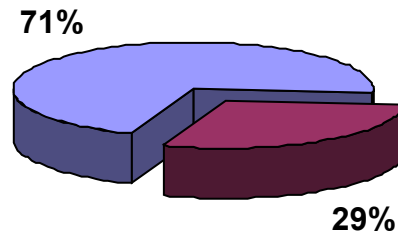
Strange but True

- **EPIC requires clients to pass performance levels.**
 - **MHBOC -contracted for support fees to begin at contract**
 - **Eclipsys fines employees using old names of products**
 - **MedicaLogic has been accused of being too honest**
 - **SCC recruits talented programmers from Warsaw**
- 

AND ELD, PORTABLE \$ O M P U T I N G

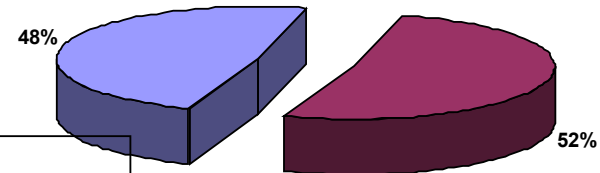
Do you have a solid need or requirement
for pole mounted or hand held devices?

Yes
No



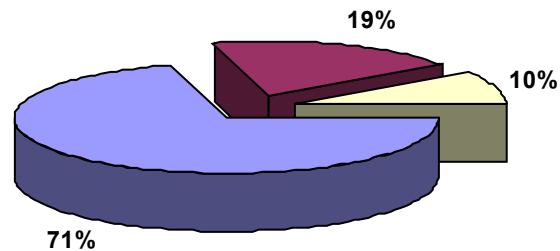
Do you feel that the price/performance for portable
devices has met your acceptable threshold?

Yes
No



Plans To Buy in 2000

None
0-10
Over 10





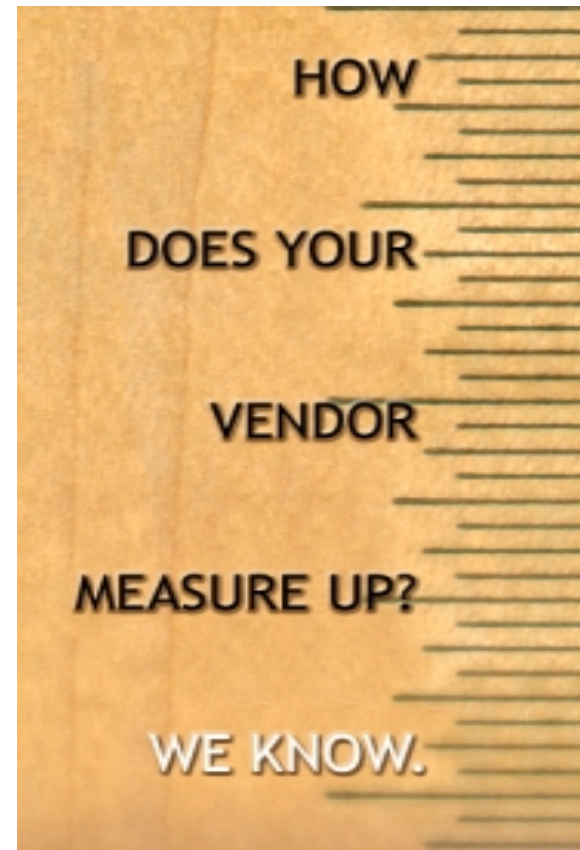
THE WEB-

EVERYONE IS (NOT) DOING IT!

90% of CIOs are still building a WEB
strategy.

Agenda for NIH (CPR @ CRC)

- KLAS data comes from?
- Normal HC providers & the CPR (a case study).
- Major HIT vendors, how do they perform?
- Interpretation- relevancy of the data to NIH.
- Summary/exploring data.






What is NIH looking for?


From Dr. Ruffin's presentation

Promote-

- **Excellence in Clinical Research**
 - **Quality of Patient Care**
 - **Cost Effectiveness & Efficiency**
- 




What is NIH looking for?

- **CDR/CPR (clear/codified/clean data)**
 - **Rules based system with Alerts and Warnings**
 - **Basis for Protocol Based Care**
 - Clinical Pathways
 - **Research Database**
 - **Flexibility to adapt commercial systems to NIH requirements**
- 



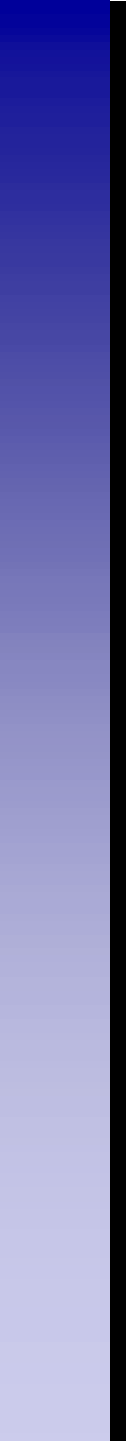
What are others looking for?

- **CDR/CPR (clear/codified/clean data)**
 - **Rules based system with Alerts and Warnings**
 - **Basis for Protocol Based Care**
 - Clinical Pathways
 - ***Research Database (NOT)***
 - ***Flexibility to adapt commercial systems to NIH requirements (NOT)***
- 




Case Study

Popular Double Speak

- Hospitals may need to note major errors. (AP)
 - Deadly errors at hospitals targeted. (Deseret News)
 - A dummy can correct medical errors. (The Boston Globe)
 - To err is human, even for doctors. (The Boston Globe)
- 



It's a Demanding World– Can the Medical Errors be solved?

- **CEO's are asking CIO's to provide solutions!**
 - **HC organizations are investing in computer based solutions!**
 - **Vendors are offering hundreds of software products.**
 - **How is it working?**
- 

Rush-Presbyterian-St. Luke's Medical Center, Chicago

- Large HC Provider
- Complex Environment
- Big SMS Invision site
- **Big Goal-** Install 3M CDR w/Rules & Alerts!





Pat Skarulis, VP CIO, Rush Presbyterian

THE GOAL- Get immediate interaction
with the MD at time of Order.

**“Alerts and warnings are of less value
once the MD moves on.”** Pat Skarulis



How can we help stop medical errors and improve care?

CIOs and CMOs say-

“Put ALL relevant clinical information in the caregivers hands-

**at the right place
at the right time!”**

◆
◆
◆
◆

St. Francis Health System, Honolulu, Hawaii

Alan Ito, CIO (Implementing Cerner Millennium)





Alan Itoh- What will it take to be successful?


“First, physicians need to be deeply involved.”

“Second, clinical data and clinical alerts must be active at the time of physician interaction.”

“Third, the software must work!”



Four Key I.T. Components

- 1. Master index to patient record (EMPI)**
 - 2. Data Dictionary (via Lexicon)**
 - 3. Clinical Data Repository**
 - 4. Clinical rules with alerts and reminders**
- 



The Status Today

- **<29% have a clinical repository**
- **<18% have a clinical workstation**
- **<4% have expert systems**

Source: PriceWaterhouseCoopers/Zinn (April 2000)





Lots of Software Out There! So What's the Problem?


648 software products available*

- **143 EMPI Vendors**
- **272 CDR Vendors**
- **233 Decision Support Vendors**

***Reported by Healthcare Informatics in 2000 Resource Guide**



Rules, Alerts, Warnings, Advice, Expert Systems

- **233 decision support solutions**
 - **Don't get excited....most are financial**
 - **Some very tough challenges**
 - **High visibility**
 - **Intense effort getting started (Complex)**
 - **Tough finding an owner**
 - **Once again, money is an issue**
 - **Success based on major software foundation**
 - **No broad use of clinical decision software**
- 



Rules, Alerts, Warnings, Advice, Expert Systems


Some CIO Quotes:

“We just use the drug interaction alerts from LastWord. We would like to do it more aggressively, but feel it must be in sync with the ambulatory and physician office systems.”

“Getting pharmacy orders to the repository is the final step so we can begin alerts.”

“We are getting our physicians to build the alerts so we know they will use them.”

“We must get physicians using the system before we can get the alerts going (chicken and egg problem).”



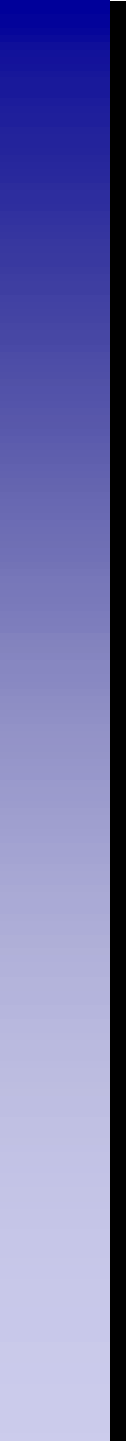
Rules, Alerts, Warnings, Advice, Expert Systems

Some Physician Quotes:

- I don't think MDs want a \$20K/yr clerk telling them they made a mistake.
- We don't have time to practice medicine and build clinical rules too.
- Attorneys would benefit more from alerts than the patient or physician.
- It will only work when it is applied universally.

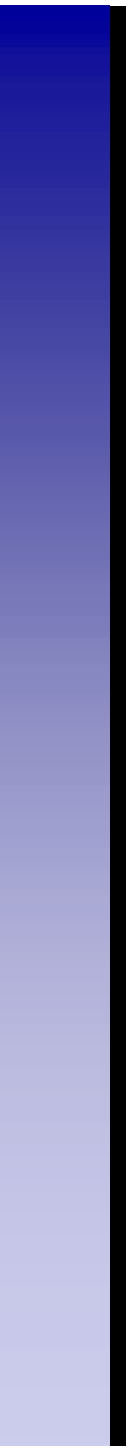


Clinical Alerts, the real story!

- **>95% have no clinical alerting.**
 - **Highly publicized sites 3-12 alerts.**
 - **Only a few have many alerts-**
 - IHC's LDS Hospital has well over 1,000 alerts
 - Brigham and Women's boasts hundreds
 - Columbia-Presbyterian is close behind
- 



A sample?

- Large high tech site has 3 alerts (2 financial with one being 72 hour rule).
 - Very prominent large site, 8 alerts.
 - Well publicized site has touted several hundred, few in actual use and all need to be re-written to match new release!
- 



Performance Report “Alerts”


From sample reports collected in 2000

Products from KLAS 2000 data % Success:

- SMS Invision <1
- IDX LastWord <5
- Cerner Millennium <10
- MHBOC Pathways <1
- 3M Care Innovations >25
- Eclipsys Sunrise Clinical Manager Beta
- Meditech, SMS MedSeries4 None
- Quadramed Affinity, MHBOC Star None



So What is Wrong?

- Most alerts are NOT immediate.
 - Many alerts are NOT meaningful.
 - Alerts and the “reasonable man” test!
 - Layering, novices and standards.
- 

WHAT I.T. VENDORS ARE PERFORMING?



LET'S TAKE A LOOK!



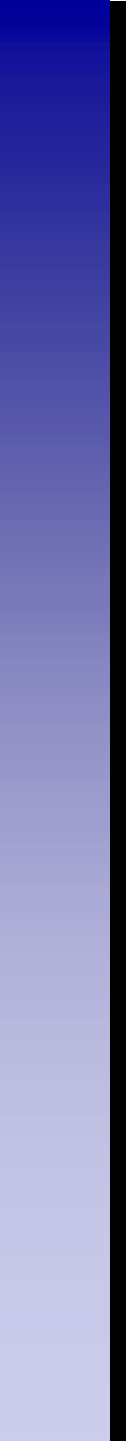
Sample Commentary

3M Care Innovations

Other vendors did not understand the detail, nor could they articulate how you get detailed data from disparate systems into a CDR. The other vendors did not have good attention to detail.

The architecture of the data dictionary is outstanding. 3M has built a data dictionary that runs rings around the competition. The data dictionary maps data in a way that simplifies the effort of adding new tests and procedures. It is unique in the industry.

The alerting packages are impressive and are proven. They also include alerts from other sites that have been re-architected.





Sample Commentary

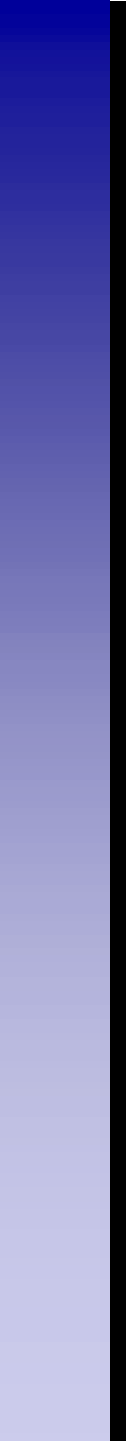
3M Care Innovations

We are creatively trying to solve how our clinicians utilize alerts and reminders, so it is done in a timely fashion. When 3M Care Innovation is in the background the reminders would tend to arrive too late for the ordering physician to make a change in the order immediately.

Alerts and warnings are of significantly less value once the MD has completed his session at the clinician workstation.

The front end stinks. Thank goodness there is major development now....

The mapping of data to get clean and comparable data is not a trivial task. The building of the Vosser (Vocabulary Server or data dictionary) is a key up-front component. The maintenance of the mapping is critical to the success of the system but it is well worth it.

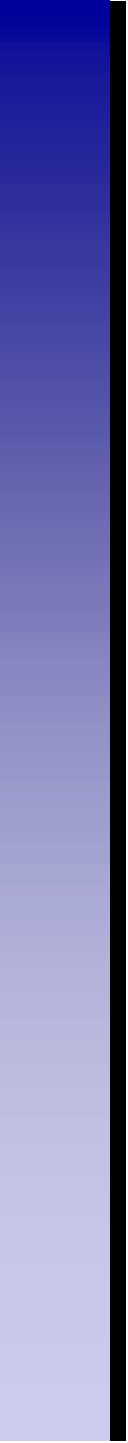




Sample Commentary

3M Care Innovations

3M is trying to figure out how to get through 3rd party HIS applications that serve the clinical users but do not provide immediate interaction with the Care Innovation stored data. For example, the end user enters a medication order. Care Innovations notifies them of a serious problem shortly after the order is completed with an alert. By then the order needs to be cancelled and a new one entered. Very cumbersome. 3M has a plan to solve this but it is only theory right now.



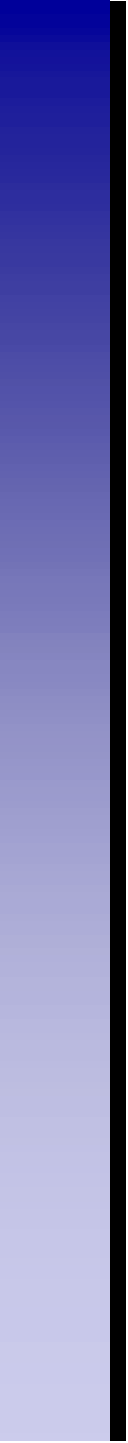


Sample Commentary

Cerner Millennium OCF and Discern

It is a big downer that our Pharmacy system is not connected. We cannot do many rules or alerts without the Pharmacy system connected to the OCF piece.

Cerner's Open Clinical Foundation (OCF) provides a very detailed and comprehensive way to store data and to report warnings and alerts. We find it a great value from Cerner in concert with another major system that we have that is also a clinical data repository.





Sample Commentary

Cerner Millennium OCF and Discern

We have come to understand with OCF that to initiate the warnings and alerts that go with the expert rules it requires a very senior analyst, almost a programmer, to understand and make sure the system works properly.

Cerner designed Millennium without really understanding the volume of data they we're going to move. The number of results they move here is very large. The response time is bad. They will be able to fix it but not without some major reconstruction at the foundation and middle layers. Ultimately Millennium will be redesigned as a thin client solution.

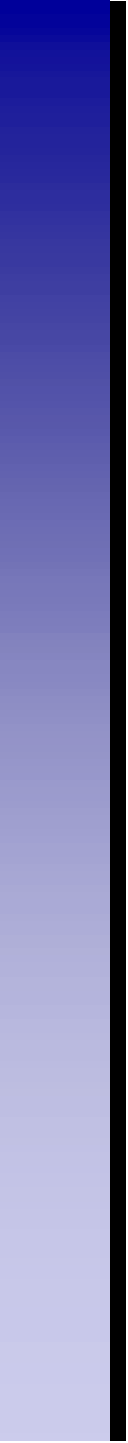


Sample Commentary

Cerner Millennium OCF and Discern

Until we start doing physician order entry we will not have any alerts that prompt the doctors. We hope to do that in the second or third phase of our project, which will be mid 2001.

Cerner's Open Clinical Foundation (OCF) provides a very detailed and comprehensive way to store data and to report warnings and alerts. We find it a great value from Cerner in concert with another major system that we have that is also a clinical data repository.





Sample Commentary

SMS Invision

We are particularly pleased with the completeness of the SMS solution, especially with the patient accounting side of our house. They have a product called HDX (Health Data

We have ____ sites (10-20 hospitals) using Invision LCR. We don't see it as a real repository of clinical data. We have gone to _____ to get our Electronic Medical Record or Computerized Patient Record. Yes, we can see clinical data in LCR but it is so buried in SMS Invision that it will never serve as the gathering point of all clinical data.



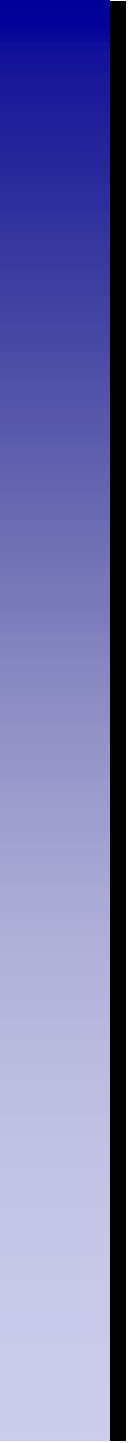
Sample Commentary

SMS Invision

We have SMS Invision and Cerner Millenium. We use Millennium for the Clinical Repository and SMS for patient accounting.

The relationship between the MPI (PIDIX), EAD, and the LCR (Lifetime Clinical Record) is flawed. There are no tools to diagnose data integrity problems and verify corrections. Investigations are practically impossible without SMS staff intervention at a price.

It does not appear that SMS is trying anymore with the Invision product. Their effort is basically lackluster. I do not think it is based on the fact that we are not buying a lot of new SMS products, but I think that is the way they treat the client base in general. We are implementing Cerner Millennium for our repository.





Sample Commentary

McKesson HBOC Pathways HNS

We are implementing a pilot with physicians using the coordinated view from HNS. We expect as many as 50 MDs to use the system initially. Right now the pilot is working with about half that number. We have lab, transcription, medication records, etc. in HNS for this pilot.

HNS was designed to be the foundation for our clinical alerts and warnings but it will be years before we get there.





Sample Commentary


Eclipsys Sunrise Clinical Manager (HV)-

The system does an excellent job of organizing and displaying the clinical information. The combinations of data display for lab, medications and radiology are wonderful.

We have yet to establish a link with Pharmacy, so any clinical decision making for our physicians cannot be done.

Eclipsys thought they could easily input pharmacy data having it look like lab data. I was shocked to see the minimal understanding they had of pharmacy and medications that were necessary to go into the HealthVision database. The database is relatively weak when it comes to pharmacy data.

It is generally good at displaying laboratory data, but cannot provide much of the other data we need. The physicians who try to use it are disappointed, because they cannot see enough of the clinical data.





Sample Commentary

Eclipsys Sunrise Clinical Manager (HV)-

It will be a miracle if “Wizard” ever gets really off the ground. Taking logic and applications from two different systems and marrying them together very rarely works. The technology at B&W has been great for them but not commercially viable.

Wizard looks very slick. I am excited to see what they can do with it.

If Eclipsys had already purchased HealthVision when we were making our decision, we would be on Eclipsys Sunrise Clinical Manager right now instead of Cerner Millennium.



Sample Commentary

IDX LastWord

IDX has set up a simple way to do clinical alerts. It basically functions like an inbox that says you have an alert. We have a lot of flexibility building alerts...that are very similar to a tickler file.

The expert rules can be built around protocols and care plans. The challenge is getting the consensus to build these alerts. The strong clinical community is helping build our alerts. At this point, we only have a handful of alerts, but we are in the very early stages ...

Our physician group is very happy with the alert building process. We have a very good group of physicians that work well with a good group of physicians at IDX.

Building alerts requires a table approach along with a lot of special programming. Defining an alert is probably the easiest part...getting a talented programming staff to program the alerts is a challenge.




Sample Commentary

IDX LastWord

The medication administration record is not up yet and won't be for a little while. It is difficult to get our physicians in sync with the system. We are yet to have any rules, alerts, or warnings from the system.

The IOM report motivates us to get the MD's prescribing through the system and using the alerts and warnings. It is fairly complex, and we have not included alerts or warnings yet.

The development of alerts, protocols, and warnings is very complex. It requires a very talented analyst. We even need to have a programmer to help us with this.





Sample Commentary

IDX LastWord

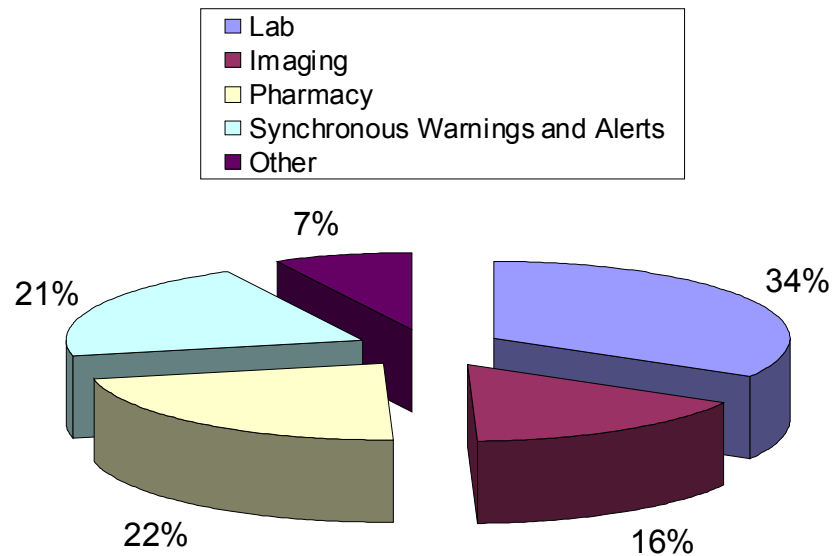
At this point, we do not have nursing documentation; we don't have physicians entering orders; we don't have any alerts, warnings, etc.; and, we do not have, at this point, medication administration records operating, but we anticipate these coming together in the next year.

We have contemplated the alerts and expert rules and have come to the conclusion that it is not as comprehensive as it sounded initially. It is a much smaller module than it sounds like in the marketing literature. Most of the alerts we are doing now are simple things like mammogram reminders.

CFO, CIO, Med. Dir., MD

Overall Respondent Results

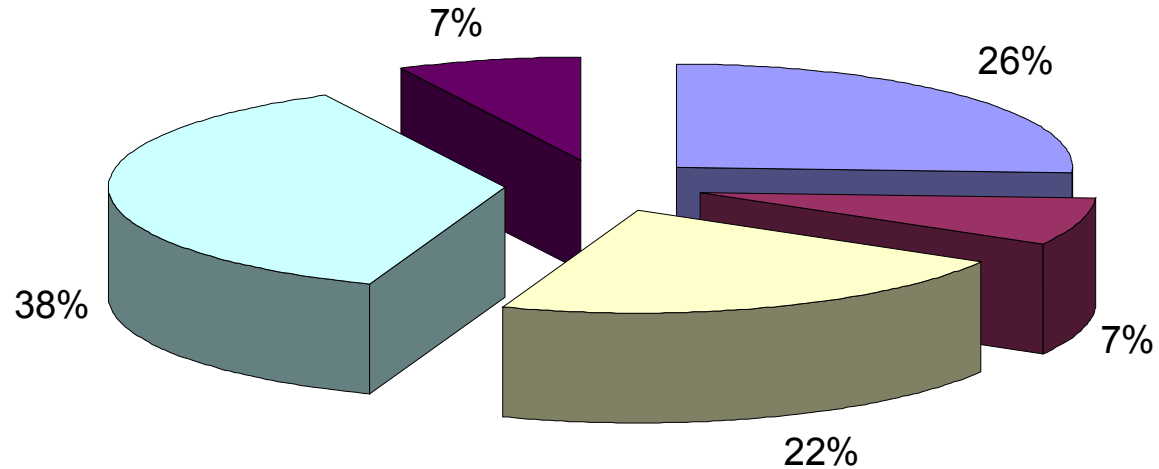
What would be the highest priority for implementation of an on-line system?



MD Responses

What would be the highest priority for implementation of an on-line system?

Lab Imaging Pharmacy Synchronous Warnings and Alerts Other






Sample Commentary

EPIC

We have validated substantial benefits from the use of EPIC. One case in point is our formulary compliance. We have seen a 20% improvement overall with some drugs seeing as much as a 73% improvement. With over 1,000 MDs using the system (Docs virtually do the Meds ordering) that is a major savings.

Compared with the other alternatives in the marketplace EPIC is the leader in real clinical decision support. However, the decision support software has been a little slow in coming up to our expectations. They seem to be moving faster now, but for a time I was disappointed.





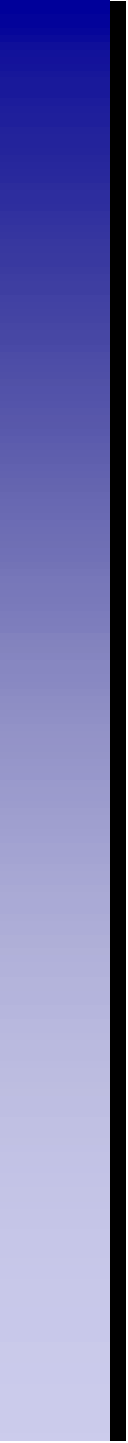
Sample Commentary

MedicaLogic

MedicaLogic provides an excellent rules-based clinical system for our physicians.

Pharmacy prescriptions and refills programs are excellent and provide a great view of past prescription history. The drug-drug checking was great.

We are using alerts from the medication system within Logician, but have not implemented other alerts yet. We anticipate expanding to that in the next six to eight months.



¢ COST OF OWNERSHIP

| <i>Vendor/Product</i> | <i>Money's Worth</i> | <i>Within Budget</i> | <i>Improved Effectiveness</i> |
|-------------------------------|----------------------|----------------------|-------------------------------|
| 3M Care Innovation | 7 | 7.4 | 7.1 |
| Cerner Millennium OCF | 5.3 | 5 | 5.4 |
| Eclipsys Sunrise HealthVision | 6.3 | 6.7 | 6.7 |
| Eclipsys TDS | 6.3 | 6.8 | 6.4 |
| IDX LastWord | 6.5 | 6.7 | 7.4 |
| Meditech Client/Server | 7.2 | 7.7 | 5.7 |
| Meditech Magic | 7.6 | 8.1 | 7.6 |
| MHBOC HealthQuest 2000 | 4.1 | 4.9 | 5.2 |
| MHBOC HNS | 3 | 4.9 | 3.3 |
| MHBOC Paragon | 2.2 | 3.5 | 1.8 |
| MHBOC Precision 2000 | 4.9 | 5.5 | 4.8 |
| MHBOC Saint | 1.9 | 5.4 | 3.3 |
| MHBOC Series 2000 | 5.6 | 5.9 | 5.2 |
| MHBOC Star 2000 | 6.2 | 6.7 | 6.1 |
| QuadraMed Affinity | 6.5 | 7.7 | 6.8 |
| SMS Allegra | 3.7 | 4.1 | 4.6 |
| SMS Invision | 5.5 | 6 | 5.7 |
| SMS MedSeries4 | 6 | 6.4 | 6.1 |
| SMS Unity | 4.2 | 4.7 | 4.9 |

s m s i NVISION

| | <i>1998 Ratings</i> | <i>2000 Ratings</i> | <i>Variance</i> |
|---------------------------------------|-------------------------|-------------------------|-----------------|
| <i>Primary Categories</i> | | | |
| Lived up to Expectations | 6.2 | 5.5 | -0.7 |
| Vendor is Improving | 5.6 | 5.4 | -0.2 |
| Service: Proactive | 5.7 | 5.6 | -0.1 |
| Quality: Money's worth | 6.3 | 5.5 | -0.8 |
| Enterprise Commitment to Technology | 6.3 | 5.4 | -0.9 |
| Executives Interested in You | 6.7 | 5.8 | -0.9 |
| Good Contracting Experience | 6.2 | 5.6 | -0.6 |
| Product works as promoted | 6.7 | 5.9 | -0.8 |
| Quality of Training | 6.1 | 6.0 | -0.1 |
| Quality of Implementation | 6.5 | 6.3 | -0.2 |
| Quality of Telephone Support | 6.2 | 6.0 | -0.2 |
| Quality of Interface Services | 6.0 | 6.3 | 0.3 |
| 3rd Party Prod. Works w/ Vendor Prod. | 6.1 | 6.2 | 0.1 |
| Helps Your Job Performance | 7.1 | 5.8 | -1.3 |
| Total | 87.7 | 81.3 | -6.4 |

Cerner Millennium OCF/CareNet

Primary and Detail Categories

| | <i>Today</i> | <i>2 Years Ago</i> | <i>Variance</i> |
|---------------------------------------|--------------|--------------------|-----------------|
| <i>Primary Categories</i> | | | |
| Lived up to Expectations | 4.8 | 5.7 | -0.9 |
| Vendor is Improving | 5.9 | 7.3 | -1.4 |
| Service: Proactive | 5.3 | 6.3 | -1.0 |
| Quality: Money's worth | 5.0 | 5.7 | -0.7 |
| Enterprise Commitment to Technology | 6.7 | 7.2 | -0.5 |
| Executives Interested in You | 5.8 | 7.0 | -1.2 |
| Good Contracting Experience | 5.9 | 6.5 | -0.6 |
| Product works as promoted | 4.3 | 5.4 | -1.1 |
| Quality of Training | 4.9 | 6.2 | -1.3 |
| Quality of Implementation | 4.7 | 5.0 | -0.3 |
| Quality of Telephone Support | 5.3 | 7.2 | -1.9 |
| Quality of Interface Services | 6.3 | 6.4 | -0.1 |
| 3rd Party Prod. Works w/ Vendor Prod. | 6.2 | 7.8 | -1.6 |
| Helps Your Job Performance | 5.6 | 6.7 | -1.1 |
| <i>Detailed Categories</i> | | | |
| Worth the Effort | 5.4 | 6.7 | -1.3 |
| Real Problem Resolution | 5.4 | 7.0 | -1.6 |
| Good Job Selling | 5.0 | 6.8 | -1.8 |
| Product Quality Rating | 5.4 | 6.2 | -0.8 |
| Implementation On Time | 3.8 | 4.4 | -0.6 |
| Implementation within Budget/Cost | 4.5 | 7.0 | -2.5 |
| Quality of Implementation Staff | 4.7 | 4.8 | -0.1 |
| Quality of Documentation | 4.1 | 4.8 | -0.7 |
| Quality of Releases & Updates | 4.9 | 6.2 | -1.3 |
| S/W Errors corrected quickly | 5.3 | 5.8 | -0.5 |
| Interfaces Met Deadlines | 5.1 | 6.0 | -0.9 |
| Quality of Custom Work | 5.2 | 7.2 | -2.0 |
| Hardware Vendor Satisfaction | 6.1 | 7.3 | -1.2 |
| Response Times | 5.2 | 5.2 | 0 |

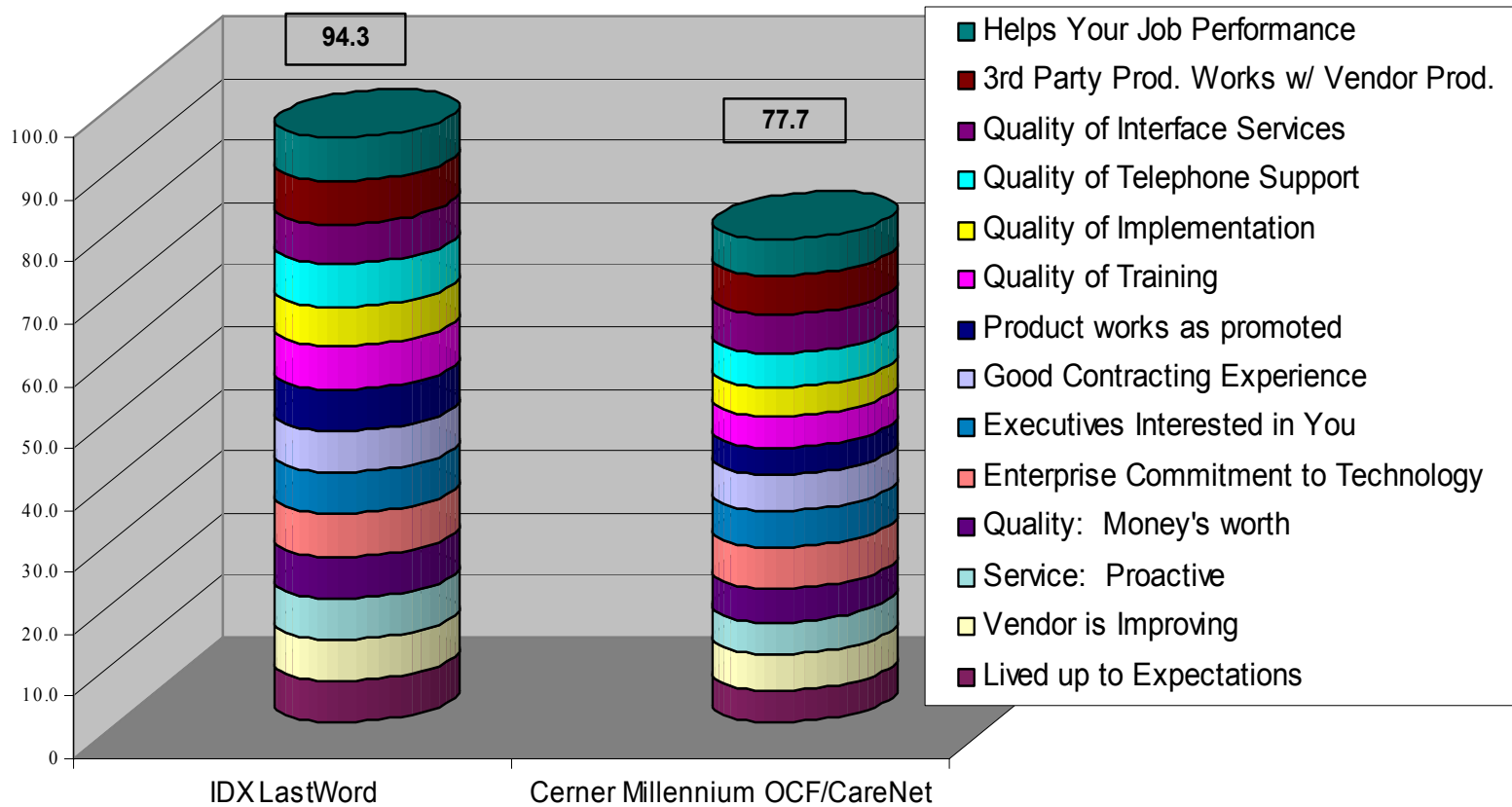
Cerner Millennium OCF/CareNet

Key Indicators of Performance

| | <i>Today</i> | <i>2 Years Ago</i> | <i>Variance</i> |
|-------------------------------------|--------------|--------------------|-----------------|
| Key Indicators | | | |
| Core Part of IS Plan | 100% | 100% | 0% |
| Would you buy it again | 74% | 83% | -9% |
| Avoids Nickel and Diming | 34% | 83% | -49% |
| Keeps all Promises | 19% | 50% | -31% |
| A fair Contract | 92% | 100% | -8% |
| Contract is Complete (No omissions) | 60% | 80% | -20% |
| Contract Administered Fairly | 97% | 83% | 14% |
| Timely Enhancement Releases | 57% | 80% | -23% |
| Support Costs as Expected | 82% | 100% | -18% |
| Ranked Client's Best Vendor | 22% | 50% | -28% |
| Ranked Client's Second Best Vendor | 14% | 0% | 14% |

Cerner Millennium vs. IDX LastWord

Primary Performance Categories

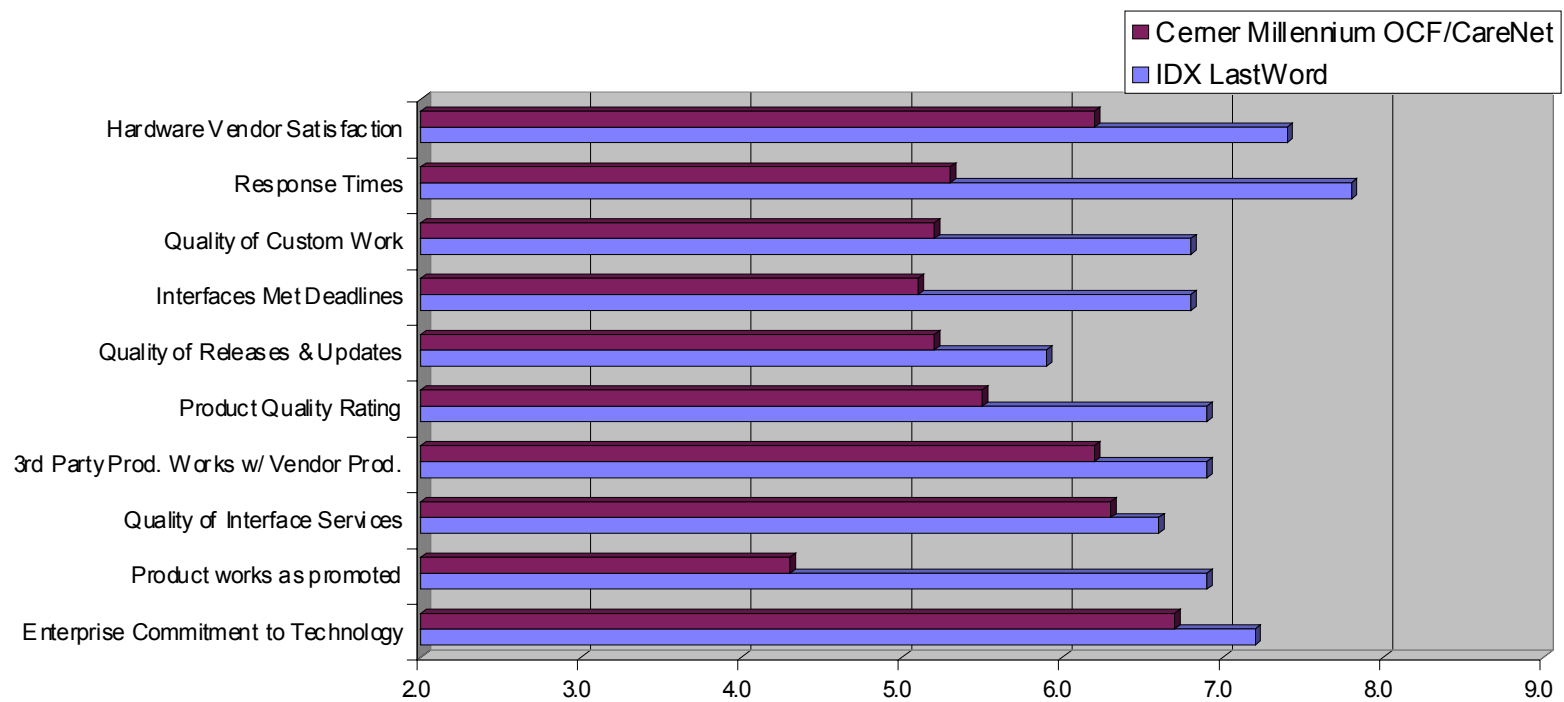


Cerner Millennium vs. IDX LastWord

Implementation and Support

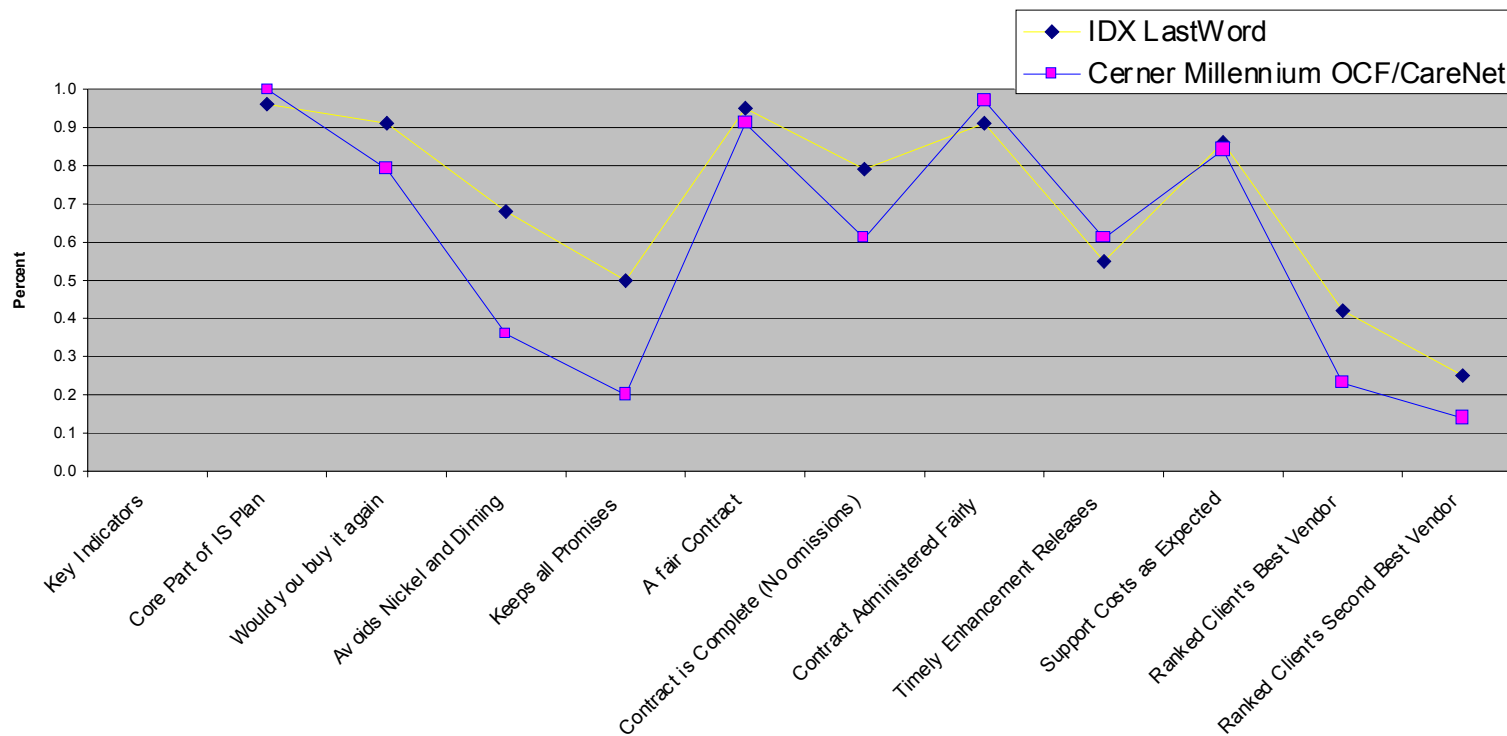
| | <i>IDX LastWord</i> | <i>Cerner Millennium OCF/ CareNet</i> | <i>Variance</i> |
|-----------------------------------|---------------------|---|-----------------|
| Vendor is Improving | 6.8 | 5.9 | 0.9 |
| Service: Proactive | 6.4 | 5.4 | 1.0 |
| Quality of Training | 6.7 | 5.0 | 1.7 |
| Quality of Implementation | 6.4 | 4.9 | 1.5 |
| Real Problem Resolution | 6.8 | 5.5 | 1.3 |
| Implementation On Time | 6.7 | 3.9 | 2.8 |
| Implementation within Budget/Cost | 6.8 | 4.6 | 2.2 |
| Quality of Implementation Staff | 6.6 | 4.8 | 1.8 |
| Quality of Documentation | 6.0 | 4.1 | 1.9 |
| S/W Errors corrected quickly | 6.2 | 5.4 | 0.8 |
| Quality of Telephone Support | 6.9 | 5.4 | 1.5 |

Cerner Millennium vs. IDX LastWord Technology



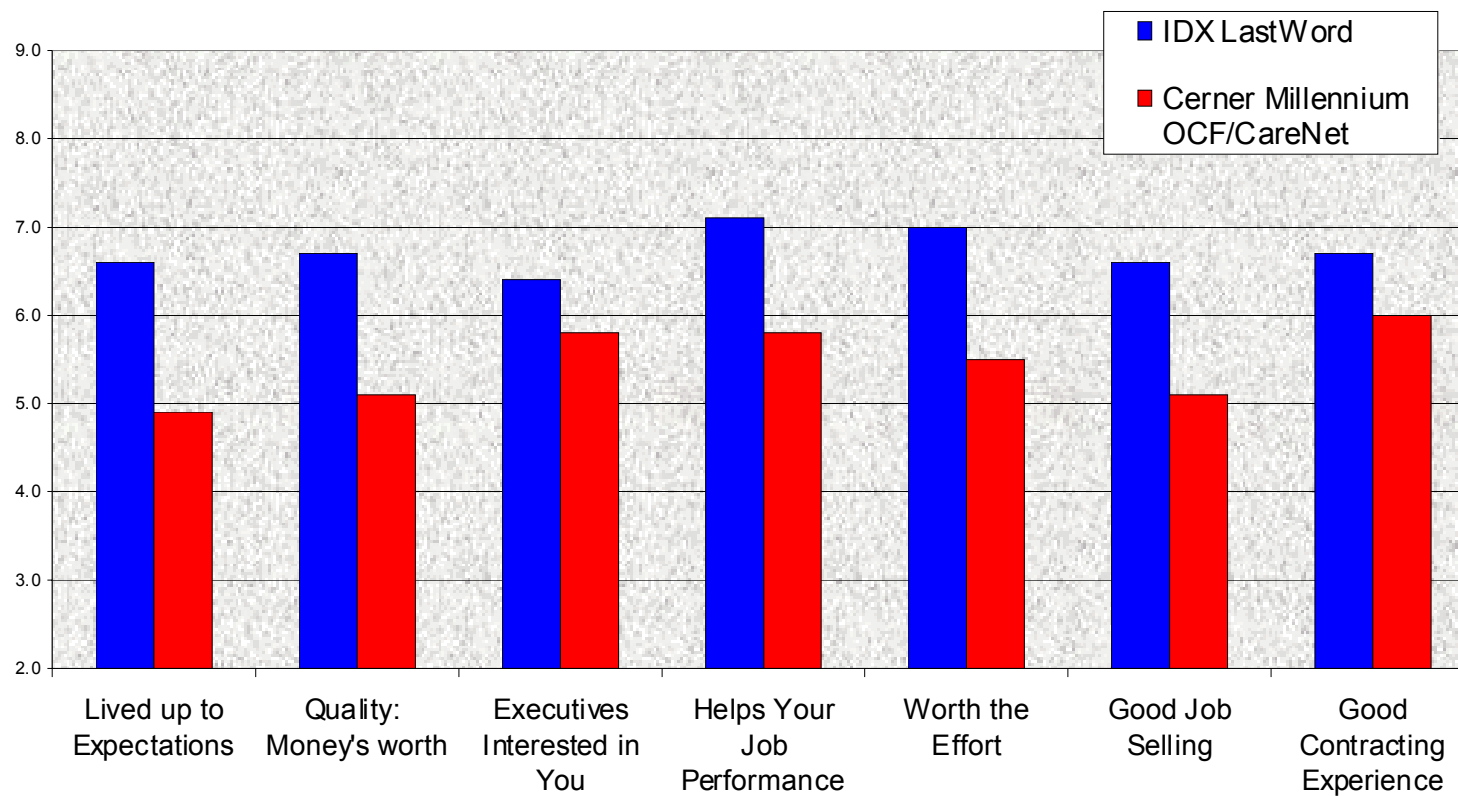
Cerner Millennium vs. IDX LastWord

Key Indicators



Cerner Millennium vs. IDX LastWord

Overall Categories



IDX LastWord

Primary and Detail Categories

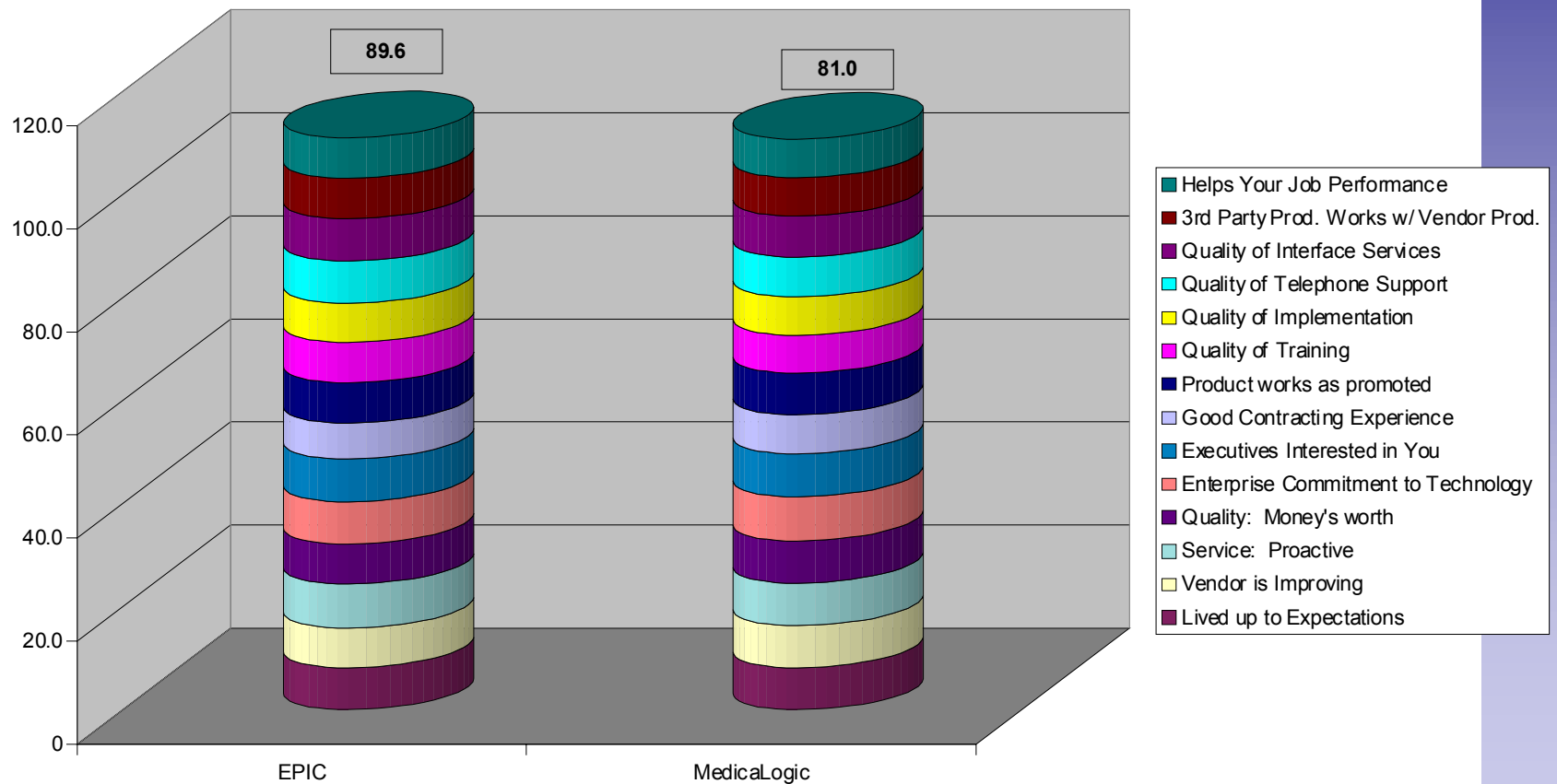
| | <i>Today</i> | <i>2 Years Ago</i> | <i>Variance</i> |
|---------------------------------------|--------------|--------------------|-----------------|
| Primary Categories | | | |
| Lived up to Expectations | 6.8 | 5.5 | 1.3 |
| Vendor is Improving | 7.2 | 4.8 | 2.4 |
| Service: Proactive | 6.8 | 4.5 | 2.3 |
| Quality: Money's worth | 7.1 | 5.7 | 1.4 |
| Enterprise Commitment to Technology | 7.1 | 6.3 | 0.8 |
| Executives Interested in You | 6.8 | 5.8 | 1.0 |
| Good Contracting Experience | 7.0 | 6.3 | 0.7 |
| Product works as promoted | 7.1 | 6.0 | 1.1 |
| Quality of Training | 6.8 | 6.6 | 0.2 |
| Quality of Implementation | 6.7 | 5.7 | 1.0 |
| Quality of Telephone Support | 7.3 | 5.8 | 1.5 |
| Quality of Interface Services | 6.7 | 4.8 | 1.9 |
| 3rd Party Prod. Works w/ Vendor Prod. | 7.1 | 4.3 | 2.8 |
| Helps Your Job Performance | 7.4 | 5.3 | 2.1 |
| Detailed Categories | | | |
| Worth the Effort | 7.2 | 6.8 | 0.4 |
| Real Problem Resolution | 7.1 | 5.4 | 1.7 |
| Good Job Selling | 6.8 | 7.1 | -0.3 |
| Product Quality Rating | 7.1 | 6.1 | 1.0 |
| Implementation On Time | 6.8 | 4.7 | 2.1 |
| Implementation within Budget/Cost | 6.8 | 5.8 | 1.0 |
| Quality of Implementation Staff | 7.1 | 6.2 | 0.9 |
| Quality of Documentation | 6.0 | 6.4 | -0.4 |
| Quality of Releases & Updates | 6.1 | 5.5 | 0.6 |
| S/W Errors corrected quickly | 6.2 | 5.0 | 1.2 |
| Interfaces Met Deadlines | 6.9 | 4.5 | 2.4 |
| Quality of Custom Work | 7.0 | 6.7 | 0.3 |
| Hardware Vendor Satisfaction | 7.5 | 7.0 | 0.5 |
| Response Times | 7.7 | 6.8 | 0.9 |

IDX LastWord

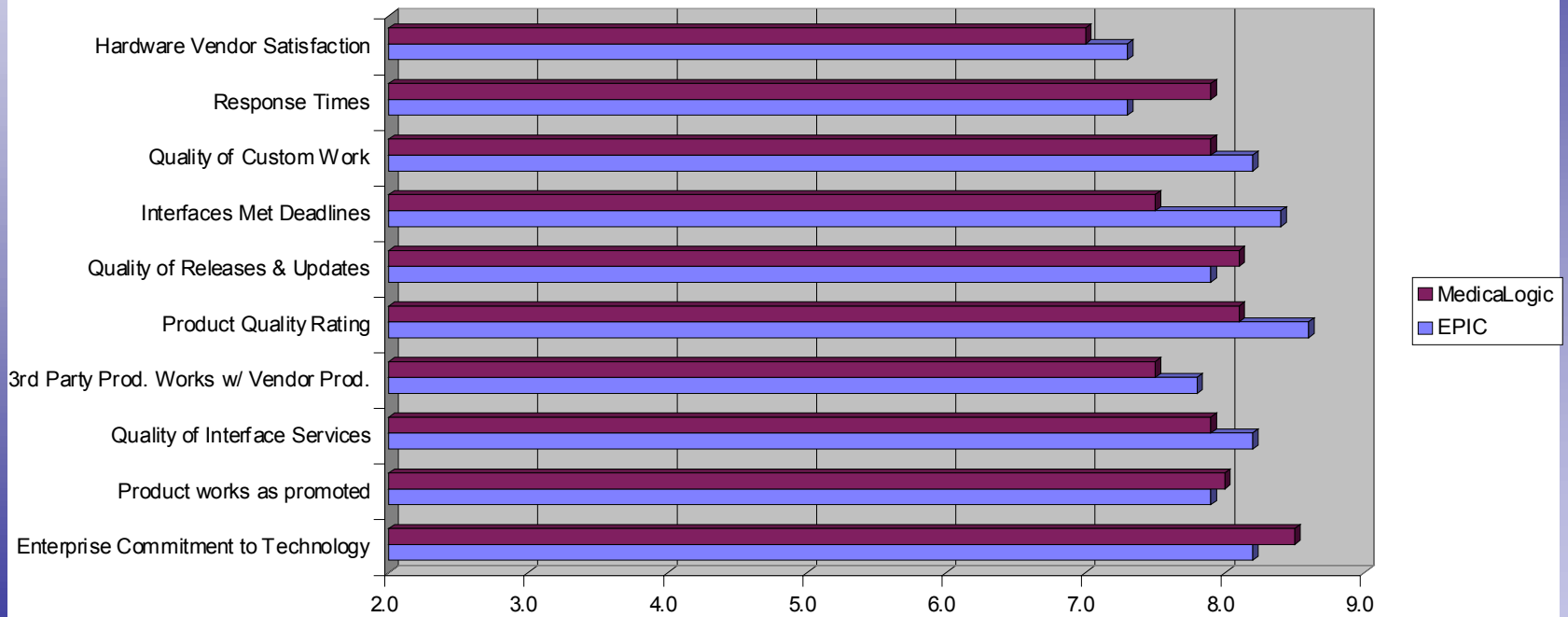
Key Indicators of Performance

| | <i>Today</i> | <i>2 Years Ago</i> | <i>Variance</i> |
|-------------------------------------|--------------|--------------------|-----------------|
| <i>Key Indicators</i> | | | |
| Core Part of IS Plan | 95% | 92% | 3% |
| Would you buy it again | 89% | 75% | 14% |
| Avoids Nickel and Diming | 78% | 67% | 11% |
| Keeps all Promises | 56% | 50% | 6% |
| A fair Contract | 94% | 90% | 4% |
| Contract is Complete (No omissions) | 80% | 90% | -10% |
| Contract Administered Fairly | 94% | 80% | 14% |
| Timely Enhancement Releases | 58% | 50% | 8% |
| Support Costs as Expected | 83% | 70% | 13% |
| Ranked Client's Best Vendor | 50% | 25% | 25% |
| Ranked Client's Second Best Vendor | 20% | 25% | -5% |

EPIC vs. MedicaLogic

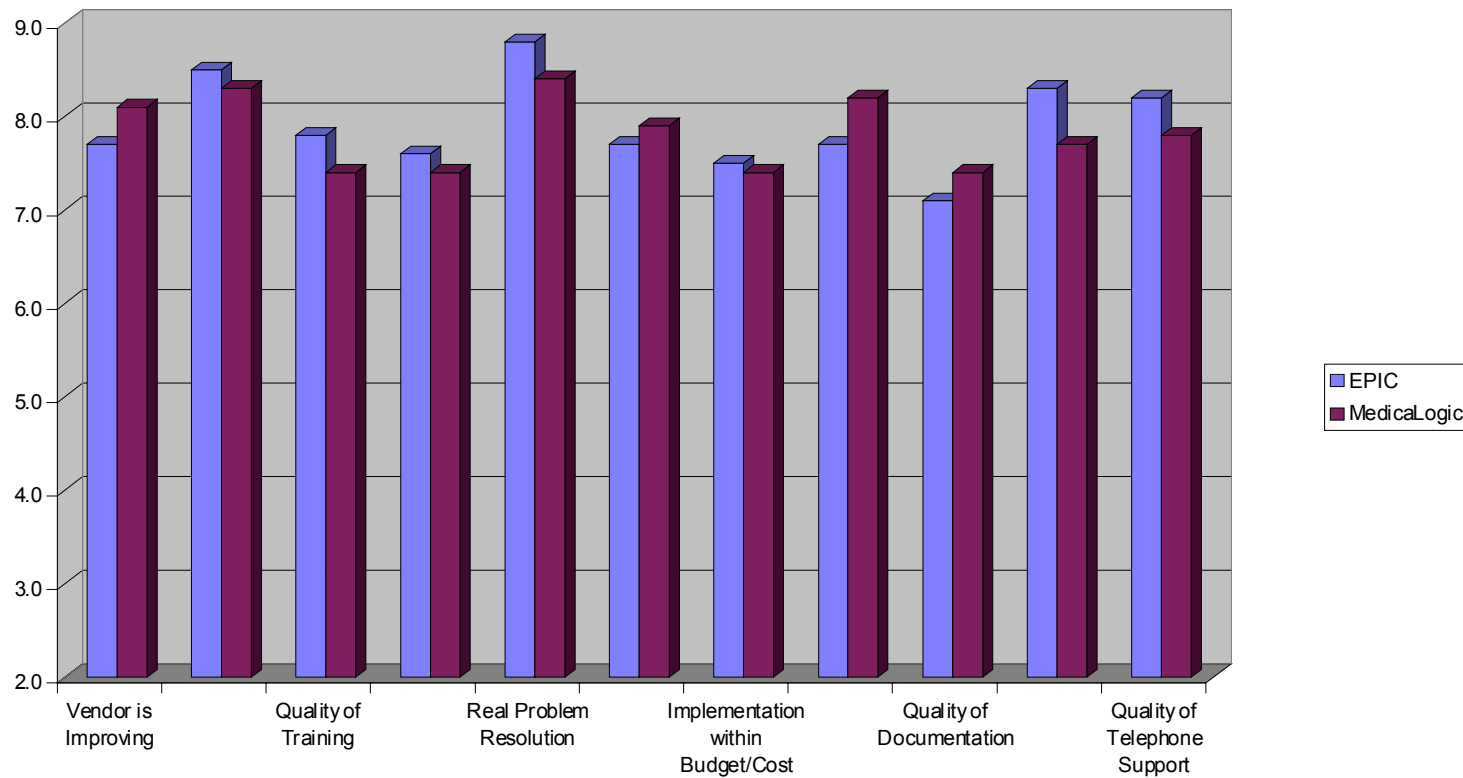


EPIC vs. MedicalLogic Technology



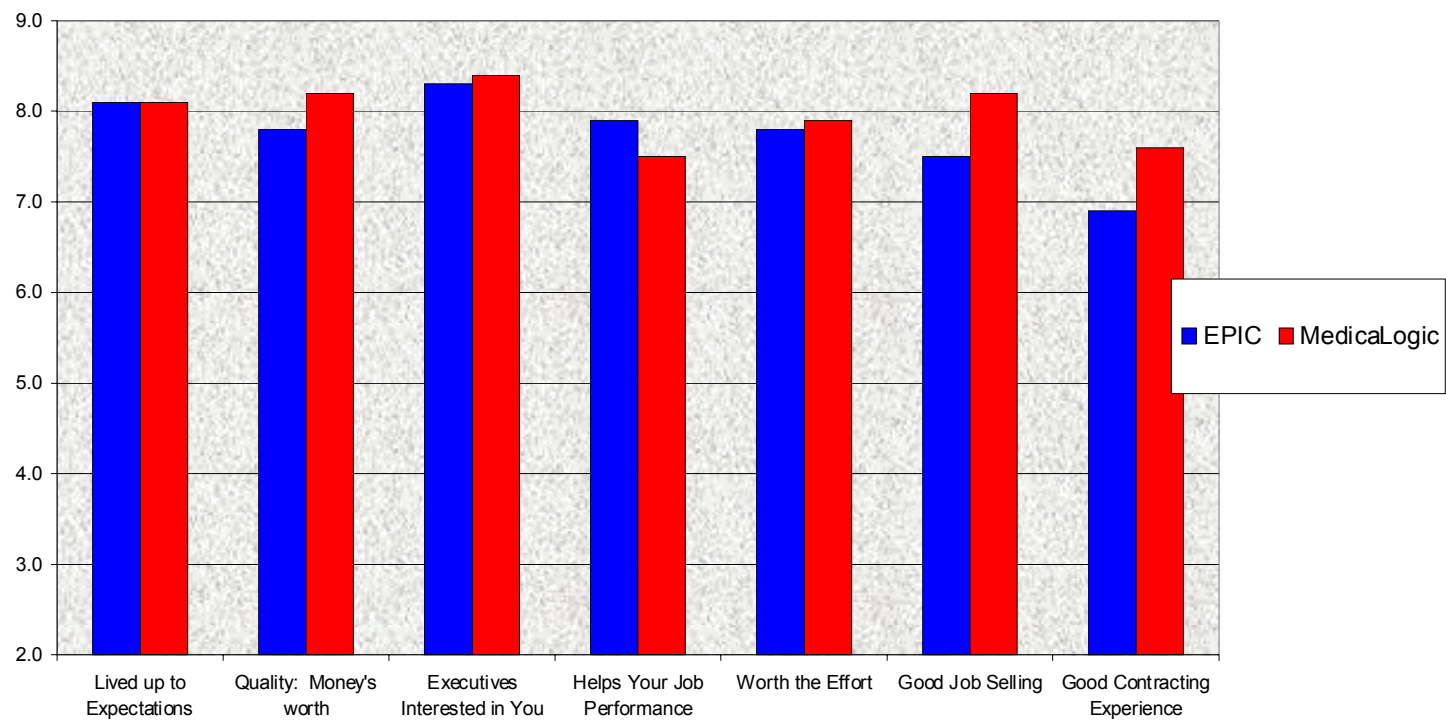
EPIC vs. MedicalLogic

Implementation and Support Services



EPIC vs. MedicaLogic

Overall Categories

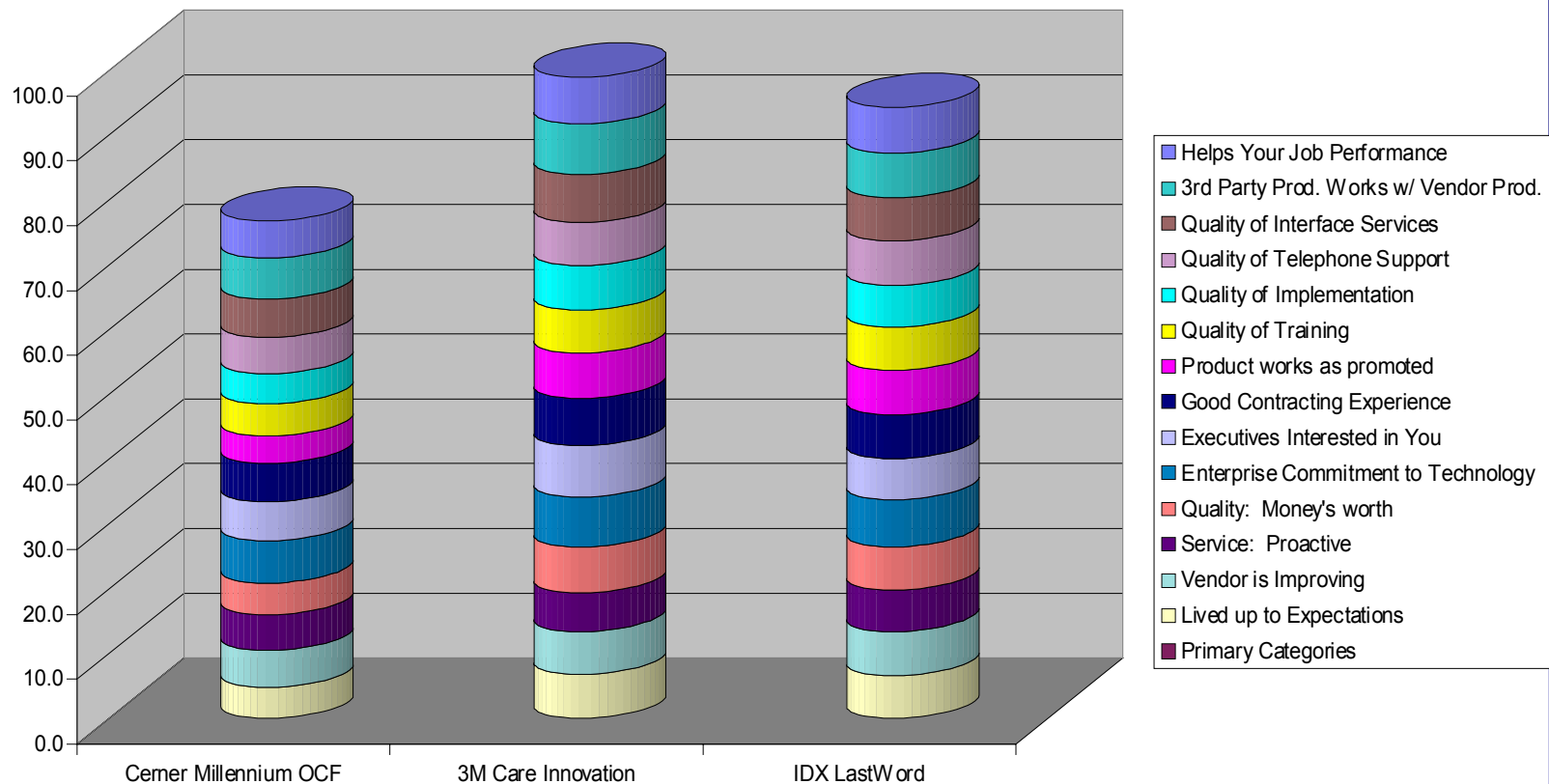


Millennium OCF, 3M Care Innovation, & IDX LastWord

Primary Categories

| | <i>Cerner Millennium OCF</i> | <i>3M Care Innovation</i> | <i>IDX LastWord</i> |
|---------------------------------------|--------------------------------------|-------------------------------|-------------------------|
| <i>Primary Categories</i> | | | |
| Lived up to Expectations | 4.8 | 6.8 | 6.6 |
| Vendor is Improving | 5.7 | 6.6 | 6.8 |
| Service: Proactive | 5.5 | 6.0 | 6.4 |
| Quality: Money's worth | 4.9 | 7.0 | 6.7 |
| Enterprise Commitment to Technology | 6.5 | 7.8 | 7.2 |
| Executives Interested in You | 6.0 | 7.9 | 6.4 |
| Good Contracting Experience | 5.9 | 7.3 | 6.7 |
| Product works as promoted | 4.3 | 7.0 | 6.9 |
| Quality of Training | 4.9 | 6.6 | 6.7 |
| Quality of Implementation | 4.7 | 6.9 | 6.4 |
| Quality of Telephone Support | 5.6 | 6.6 | 6.9 |
| Quality of Interface Services | 5.9 | 7.4 | 6.6 |
| 3rd Party Prod. Works w/ Vendor Prod. | 6.3 | 7.8 | 6.9 |
| Helps Your Job Performance | 5.7 | 7.2 | 7.1 |

Millennium OCF, 3M Care Innovation, & IDX LastWord Primary Categories



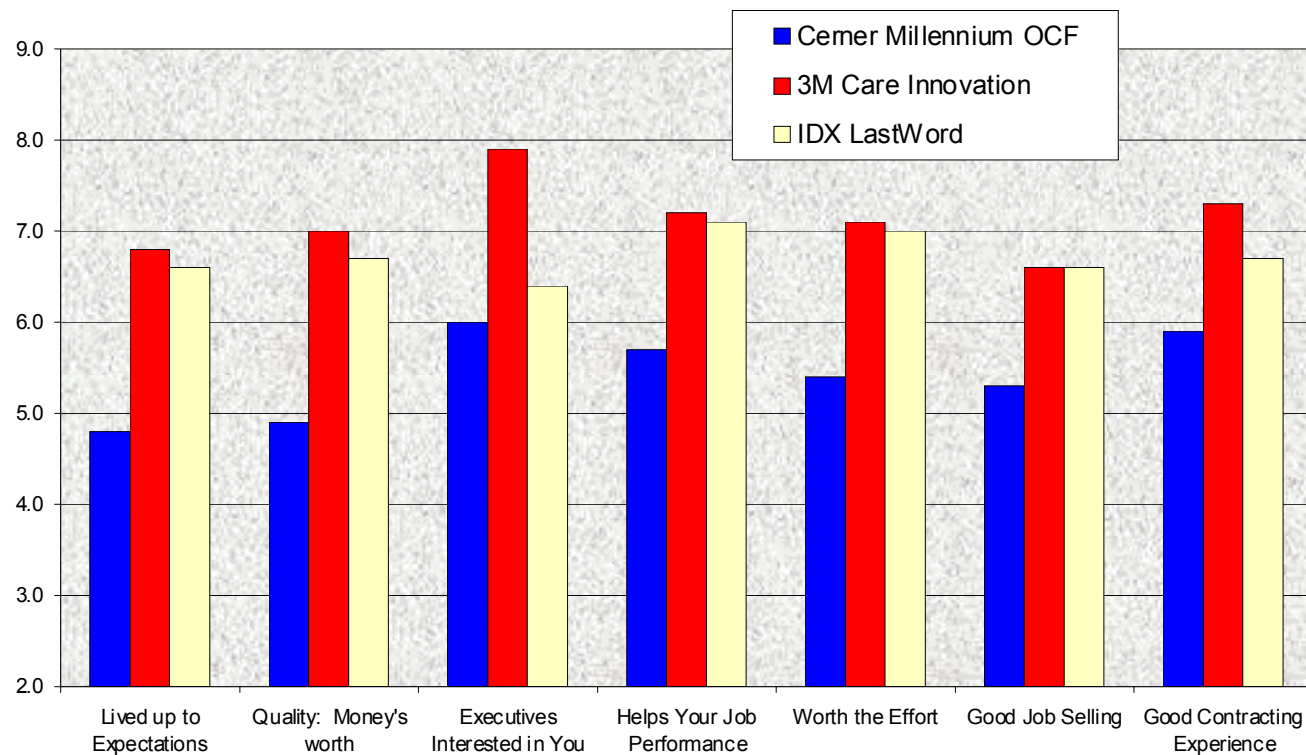
Millennium OCF, 3M Care Innovation, & IDX LastWord

Key Indicators

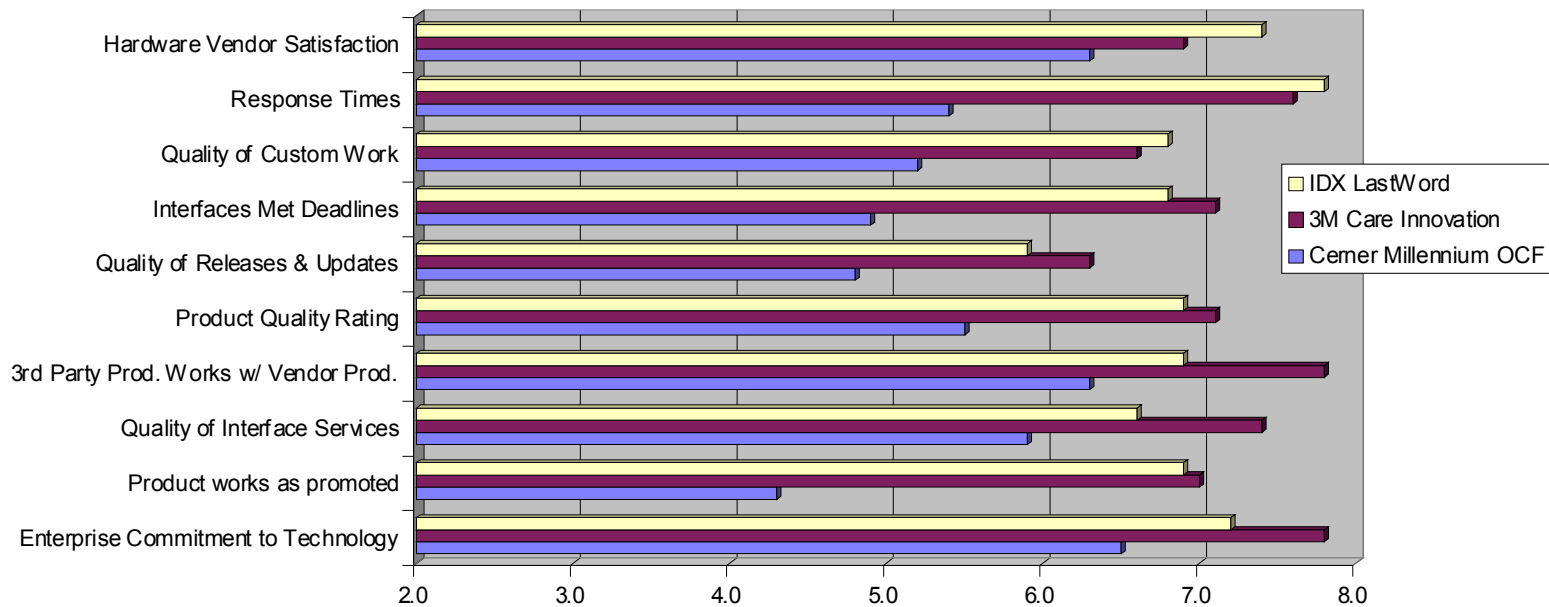
| | <i>Cerner Millennium OCF</i> | <i>3M Care Innovation</i> | <i>IDX LastWord</i> |
|-------------------------------------|--------------------------------------|-------------------------------|-------------------------|
| <i>Key Indicators</i> | | | |
| Core Part of IS Plan | 100% | 100% | 96% |
| Would you buy it again | 73% | 88% | 91% |
| Avoids Nickel and Diming | 40% | 86% | 68% |
| Keeps all Promises | 26% | 43% | 50% |
| A fair Contract | 88% | 100% | 95% |
| Contract is Complete (No omissions) | 64% | 100% | 79% |
| Contract Administered Fairly | 100% | 100% | 91% |
| Timely Enhancement Releases | 60% | 86% | 55% |
| Support Costs as Expected | 75% | 86% | 86% |
| Ranked Client's Best Vendor | 22% | 50% | 42% |
| Ranked Client's Second Best Vendor | 19% | 25% | 25% |

Millennium OCF, 3M Care Innovation, & IDX LastWord

Overall Categories




Millennium OCF, 3M Care Innovation, & IDX LastWord Technology





NIH-CRC Summary

- Depth and breadth don't come together
 - Component parts vary
 - Eclipsys with Sunrise CM (Healthvision)
 - 3M with Care Innovation Suite
 - Epic with EpicCare
 - IDX with LastWord
 - Cerner with HNAM OCF and CareNet
 - MedicaLogic with Logician
 - Research database not a core HIT product
 - Vendors are re-inventing the wheel
 - Consolidation will occur, less venture \$.
- 

KLAS Enterprises



Thank a million!